

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A reporter nucleic acid comprising a first DNA molecule comprising nucleotides 3005-4336 of SEQ ID NO:1 contiguous to nucleotides 1-243 of SEQ ID NO:1 or a second DNA molecule which has at least 80% identity with said first DNA molecule and which has the same reporter function as said first DNA molecule.
2. The reporter nucleic acid of Claim 1 comprising said first DNA molecule.
3. The reporter nucleic acid of Claim 1 comprising said second DNA molecule.
4. The reporter nucleic acid of Claim 3, wherein a nucleic acid sequence encoding a wildtype GFP or a sequence having at least 98% identity to said wildtype sequence replaces nucleotides 3485-4330 of SEQ ID NO:1.
5. The reporter nucleic acid of Claim 4, wherein the nucleic acid encoding a wildtype GFP comprises the nucleotide sequence set forth in SEQ ID NO:2.
6. The reporter nucleic acid of Claim 1 contained within a vector.
7. The reporter nucleic acid of Claim 6 comprising the nucleotide sequence set forth in SEQ ID NO:1.
8. The reporter nucleic acid of Claim 6 comprising the nucleotide sequence set forth in SEQ ID NO:1, wherein the nucleotide sequence set forth in SEQ ID NO:2 replaces nucleotides 3485-4330 of SEQ ID NO:1.
9. A host cell transformed with the reporter nucleic acid of Claim 1.
10. The host cell of Claim 9 which is a zebrafish cell.
11. A transgenic zebrafish comprising the reporter nucleic acid of Claim 1.
12. The transgenic zebrafish of Claim 11 which further comprises an induced mutation.

13. The transgenic zebrafish of Claim 11, wherein the mutation has been induced by chemical mutagenesis.

14. The transgenic zebrafish of Claim 11, wherein the mutation has been induced by insertional retrovirus mutagenesis.

15. A method for identifying a gene that modulates the β -catenin signaling pathway which comprises:

analyzing the level of expression of the reporter nucleic acid of Claim 1 contained in a transgenic zebrafish which also comprises an induced mutation;

analyzing the level of expression of said reporter nucleic acid contained in a control transgenic zebrafish without said mutation;

comparing the levels of expression of said reporter nucleic acid to identify zebrafish with said mutation having an altered level of expression of said reporter nucleic acid; and

identifying the gene containing the induced mutation.

16. A method for identifying a gene that modulates the β -catenin signaling pathway which comprises:

analyzing the level of expression of the reporter nucleic acid of Claim 2 contained in a transgenic zebrafish which also comprises an induced mutation;

analyzing the level of expression of said reporter nucleic acid contained in a control transgenic zebrafish without said mutation;

comparing the levels of expression of said reporter nucleic acid to identify zebrafish with said mutation having an altered level of expression of said reporter nucleic acid; and

identifying the gene containing the induced mutation.

17. A method for identifying a gene that modulates the β -catenin signaling pathway which comprises:

analyzing the level of expression of the reporter nucleic acid of Claim 4 contained in a transgenic zebrafish which also comprises an induced mutation;

analyzing the level of expression of said reporter nucleic acid contained in a control transgenic zebrafish without said mutation;

comparing the levels of expression of said reporter nucleic acid to identify zebrafish with said mutation having an altered level of expression of said reporter nucleic acid; and

identifying the gene containing the induced mutation.

18. A method for identifying a gene that modulates the β -catenin signaling pathway which comprises:

analyzing the level of expression of the reporter nucleic acid of Claim 7 contained in a transgenic zebrafish which also comprises an induced mutation;

analyzing the level of expression of said reporter nucleic acid contained in a control transgenic zebrafish without said mutation;

comparing the levels of expression of said reporter nucleic acid to identify zebrafish with said mutation having an altered level of expression of said reporter nucleic acid; and

identifying the gene containing the induced mutation.

19. A method for identifying a gene that modulates the β -catenin signaling pathway which comprises:

analyzing the level of expression of the reporter nucleic acid of Claim 8 contained in a transgenic zebrafish which also comprises an induced mutation;

analyzing the level of expression of said reporter nucleic acid contained in a control transgenic zebrafish without said mutation;

comparing the levels of expression of said reporter nucleic acid to identify zebrafish with said mutation having an altered level of expression of said reporter nucleic acid; and

identifying the gene containing the induced mutation.

20. The method of Claim 15, wherein the altered level of expression is a reduction or loss of expression.

21. The method of Claim 15, wherein the altered level of expression is an increase.

22. A method for screening a candidate drug that is potentially useful for the treatment or prevention of a disease condition involving a β -catenin signaling pathway which comprises:

analyzing the level of expression of the reporter nucleic acid of Claim 1 contained in a transgenic zebrafish in the presence of a candidate drug;

analyzing the level of expression of said reporter nucleic acid contained in said transgenic zebrafish in the absence of the candidate drug;

comparing the levels of expression of said reporter nucleic acid to identify an altered level of expression of said reporter nucleic acid in the presence of said candidate drug, wherein an altered level of expression of said reporter nucleic acid is indicative of a drug useful for the treatment or prevention of said disease condition.

23. A method for screening a candidate drug that is potentially useful for the treatment or prevention of a disease condition involving a β -catenin signaling pathway which comprises:

analyzing the level of expression of the reporter nucleic acid of Claim 2 contained in a transgenic zebrafish in the presence of a candidate drug;

analyzing the level of expression of said reporter nucleic acid contained in said transgenic zebrafish in the absence of the candidate drug;

comparing the levels of expression of said reporter nucleic acid to identify an altered level of expression of said reporter nucleic acid in the presence of said candidate drug, wherein an altered level of expression of said reporter nucleic acid is indicative of a drug useful for the treatment or prevention of said disease condition.

24. A method for screening a candidate drug that is potentially useful for the treatment or prevention of a disease condition involving a β -catenin signaling pathway which comprises:

analyzing the level of expression of the reporter nucleic acid of Claim 4 contained in a transgenic zebrafish in the presence of a candidate drug;

analyzing the level of expression of said reporter nucleic acid contained in said transgenic zebrafish in the absence of the candidate drug;

comparing the levels of expression of said reporter nucleic acid to identify an altered level of expression of said reporter nucleic acid in the presence of said candidate

drug, wherein an altered level of expression of said reporter nucleic acid is indicative of a drug useful for the treatment or prevention of said disease condition.

25. A method for screening a candidate drug that is potentially useful for the treatment or prevention of a disease condition involving a β -catenin signaling pathway which comprises:

analyzing the level of expression of the reporter nucleic acid of Claim 7 contained in a transgenic zebrafish in the presence of a candidate drug;

analyzing the level of expression of said reporter nucleic acid contained in said transgenic zebrafish in the absence of the candidate drug;

comparing the levels of expression of said reporter nucleic acid to identify an altered level of expression of said reporter nucleic acid in the presence of said candidate drug, wherein an altered level of expression of said reporter nucleic acid is indicative of a drug useful for the treatment or prevention of said disease condition.

26. A method for screening a candidate drug that is potentially useful for the treatment or prevention of a disease condition involving a β -catenin signaling pathway which comprises:

analyzing the level of expression of the reporter nucleic acid of Claim 8 contained in a transgenic zebrafish in the presence of a candidate drug;

analyzing the level of expression of said reporter nucleic acid contained in said transgenic zebrafish in the absence of the candidate drug;

comparing the levels of expression of said reporter nucleic acid to identify an altered level of expression of said reporter nucleic acid in the presence of said candidate drug, wherein an altered level of expression of said reporter nucleic acid is indicative of a drug useful for the treatment or prevention of said disease condition.

27. The method of Claim 22, wherein the altered level of expression is a reduction or loss of expression.

28. The method of Claim 22, wherein the altered level of expression is an increase.

29. The method of Claim 22, wherein said disease condition is melanoma, colorectal cancer or osteoporosis.